DALY (W. H.)

A plea for early operation in diseases of the antrum of Highmore.

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A PLEA FOR EARLY OPERATION IN DISEASES OF THE ANTRUM OF HIGHMORE.

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Since the antrum is a closed cavity, excepting through a single opening by which it is closely related with the nasal, buccal, and other cavities, it of necessity follows that any disease of it may soon produce morbid conditions in one or more of the other accessory cavities.

This may follow the drainage of pus into the nasal cavity, with subsequent inflammation of the mucous membrane. It may follow the obstruction of the separating bony wall by pressure, absorption, caries, or necrosis. There is also serious liability to damage to the eye, so that I make the plea that for all conditions in which severe inflammation, pus, tumors, or necrosis are present we should, as soon as the diagnosis is established, deal with the condition surgically, in order that the integrity, not only of the antrum itself, but the surrounding parts, is maintained to the greatest extent possible; and even if there is some doubt existing as to the disease of the antrum, or in cases that are otherwise somewhat masked, I would strongly advise an exploratory opening for diagnostic purposes, which may be made very small and yet efficient, and one which will close and heal up in a very short time if sufficient disease is not revealed to call for keeping it open.

I have had many cases of chronic as well as malignant disease of the antrum to deal with in the past twenty years, and the sum of my experience is, that for want of early diagnosis and operative treatment some of the patients have perished that with early operation could certainly have been permanently cured.

I am not quite sure that the specialist in rhinology is not sometimes to blame, as well as the general practitioner, for not taking

early and active surgical measures in these cases instead of resorting to ordinary topical or medical treatment.

In August of 1888 I had a conversation with Mr. Lennox Browne, in London, on the subject of early operation on the antrum of Highmore.

He was then engaged in treating a number of cases, and making some observations upon their pathology and etiology.

Mr. Browne began by asking me the question, Do you see many cases of purulent catarrh of the antrum of Highmore in your practice? I told him I had seen a rather large number of them, and had reported two cases to the American Laryngological Association as early as 1882, six years before;[1] since that time some twenty-seven cases have fallen under my care, and I now have four cases under surgical treatment.

I was then, as I am now, in favor of early operation whenever it is possible to see the cases early. In this view Mr. Browne agreed fully, and I see he has publicly verified his opinions by publishing in the March 31, 1894, number of the *British Medical Journal* a case, of which the following is a summary:

The patient, a young woman, aged twenty years, had been attacked with influenza about six weeks previously to presenting herself at the hospital. On the subsidence of the acute stage she suffered severely from toothache, which involved the first and second bicuspid teeth in the right upper jaw; subsequently she experienced severe pain with swelling of the right cheek, which somewhat subsided on the occurrence of a yellow and rather thin discharge from the right nostril.

After removal of the first bicuspid the antrum was opened through the socket, the cavity was curetted and syringed out with a weak antiseptic solution, and the hole kept open by a hickory-wood plug.

The cure was complete in a few days, thus distinguishing it from cases of a chronic nature, the characteristic of which is their strong resistance to treatment.

This was not the first example of acute inflammation of the antrum which Mr. Lennox Browne had had to deal with, and now that

[1] "Naso-antral Catarrh and its Treatment." Archives of Laryngology, vol. iii., No. 4, October, 1882.

attention had been drawn to the subject, the malady would in all probability be found to be less rare than had been hitherto considered.

Through the esteemed courtesy of Dr. G. Lenox Curtis, of New York, I was permitted a few weeks ago—in the early part of May, 1894—to examine a number of his cases of antral disease which he has operated upon at various recent periods.

Nearly all of the cases, excepting one or two, submitted to my examination by Dr. Curtis were of a non-specific type, and one of the exceptional cases was a most unusual one—viz., symmetrical in character, though not simultaneously so, the right side having been operated upon some months ago, and the left side was, at the time of examination, giving such evidence of disease as to call for operative interference. A curious phase of this case was the patient's ability to take a mouthful of cleansing or antiseptic fluid, and by a self-trained voluntary, atmospheric, and bucco-lingual pressure cause the fluid to flow from the buccal cavity through the antrum and out of the nostril.

I am under the impression that with a little teaching other patients could learn as well to do this, as, for example, when travelling, it is not always possible for a patient to use a syringe, and cleanliness must be observed to get desired results.

I should qualify the remark about the above case of double antral disease by saying that while non-specific double cases are rare in my experience, we all know that a strong characteristic of syphilitic disease, even throat or palatal ulcerations or patches, is their usual symmetry. So this case of double antral disease, while it might be unusual as simple catarrhal disease, is another evidence of the symmetrical characteristic of specific disease.

As to the point of election for entering the antrum, I am of the opinion that the natural opening is not desirable, as it seems too much like trifling with treatment to endeavor to cleanse this cavity with a small syringe, with a curved point, entered at the natural antronasal opening; better far to make an opening either through the alveoli, the socket of a tooth, or through the bony wall of the antrum just below the malar bone, about the region just external to and above the second bicuspid tooth.

While I was formerly in favor of making a large opening, I find, after experience, that the opening should never be larger than a small goose-quill, as a large one may cause whistling by air currents, and permits the entrance of food.

In my opinion, the best means of cleansing the cavity is with the ordinary soft rubber compression-bulb syringe of the Davidson pattern, and a proper-sized tip. This affords nearly a continuous flow, with which a pint of antiseptic fluid can be pumped through the cavity and allowed to flow out through the naris, carrying with it the diseased secretions.

Care should be taken to break down the lamellæ of bone that sometimes exist in the diseased antrum, confining the pus or other inflammatory products. This can be done by entering a strong, curved, steel exploratory probe or curette.

I have more than once trephined the antrum, and experienced a feeling of disappointment and surprise until I had, by exploratory breaking down of the lamellar walls or partitions, released purulent matter of a most sickening odor. Always remove all necrosed bone or teeth that may be found in the cavity of the antrum.

The operation is of the simplest character, and is best done by using a conical burr-headed drill, which, with slight pressure, enters the cavity.

The results of the operation, however, are by no means always free from danger, since some of us can call to mind that one of the most talented of men, Dr. Beard, of New York, died some years ago, in less than a hundred hours, from septic pneumonia following an operation for antral disease by Dr. Goodwillie, of New York, a most clever operator, and a gentleman of large experience in this class of cases.

I have also frequently observed serious constitutional disturbance following the operation, but no fatality in my own practice.

It is true that, in cases of chronic catarrh of the antrum with suppuration, treatment may be carried on through the natural opening into the nasal cavity; but this is difficult and unsatisfactory, and certainly the most rational course is trephining at the most dependent part, and thus securing good drainage and an opportunity to effect thorough cleanliness and the application of local remedies.

By the introduction of a plugged canula or simple wooden plug the swallowing of the discharges, with consequent gastric disturbance, may to a great extent be avoided.

Further, in cases of abnormal growths, being confined as they are in a closed space, early surgical methods ought to be adopted for their removal.

It goes without saying that growths and necrosis in any location should be thoroughly removed; but when the antrum is involved this removal should be at the earliest possible moment.

In cases of foreign growths, especially those that have passed from the region of the benign into that of the malignant—a condition that is a very probable one in a large percentage of cases—then we have a condition to deal with that calls for most serious surgical considerations, since nothing short of removing bodily all of the diseased structures, whether bony or soft, will at all insure safety from a return of the disease.

A number of these undesirable cases have in the past ten years fallen under my professional care for the purposes of surgical operation, and I candidly say I always shrink from the professional responsibility of them, as the percentage of malignity is large among them, and the operation so often involves the removal of all of the malar and generally a part of the superior maxillary and nasal bones, together often with the floor of the orbit and sometimes the eye.

That the death-rate is large and the operation itself of the most appalling character, and that the disease is liable to return, cannot be doubted, and hence an added plea for early operation.

In a large proportion of my own cases, as well as that of other specialists, I learn that, especially in the severe cases, the pain is always referred to the region above the eye. Now, why that is the case it is difficult to explain, and I shall not attempt it, but the clinical fact remains, and is worth noting. It is illustrated by the following:

Case I.—Mrs. J. M. K., aged fifty-four years, married, mother of five children, never very robust, suffered from malaria for several years. No history of other sickness previous to present one. In December, 1891, complained of an oppressive feeling in head, part of the time being confined to bed.

January 1, 1892.—Dr. W. N. Bailey, of East Liverpool, Ohio, family physician, was called and prescribed for malaria.

2*d to* 8*th*.—Away on a visit; suffered greatly; had some dyspnœa.

On February 29th Dr. W. N. Bailey was again called. Patient complained of pain above the left eye, beginning about 9 A.M., gradually subsiding toward evening. Weak with loss of flesh. All remedies prescribed gave no relief.

March 3*d*.—Nasal cavities examined and growths, diagnosticated to be nasal polypi, discovered.

4*th*.—With cocaine, with a Jarvis snare, a part of the growth which had impacted the nasal cavity was removed. Operation interfered with by hemorrhage. Much relief affored. Operation repeated with like result on March 14th, 22d, and 29th.

April 13*th*.—I was called in consultation by Dr. W. N. Bailey. I trephined and curetted the antrum, and, with the doctor's assistance, removed a quantity of polypoid myxomatous masses, equal in amount to the capacity of the antrum.

The hemorrhage was very copious, and the eyeball, which was protruding on the same side, gave evidence of much more mischief to be feared, and on June 16th the doctor sent for me again to come prepared to remove the entire mass, which had grown very rapidly since clearing out the antrum on April 13th.

I found the eye much more protruded; the face swollen and distorted; the discharge through the naso-antral opening sanious and offensive. There was some enlargement of opening by ulcerative absorption at the seat of the last operation through the alveolus.

With the assistance of the late Dr. James McCann, of Pittsburg, Dr. W. N. Bailey, Dr. W. R. Clark, and Dr. J. M. Kelly, of East Liverpool, Ohio, the latter a son of the patient, I did Langenbeck's operation, carrying an incision from the edge of the lip upward, following a line along the nose to near the naso-orbital angle, thence laterally along the lower rim of the orbit and eyelid to a point below the outer canthus of the eye, dissecting this flap back and fastening it out of the way.

I then cut through the ala nasi and sæptum and laid the nose over to the other side; then with a saw and strong cutting and lion-jawed bone forceps I proceeded to remove half of the upper jaw, malar bone, part of the ossa nasi, including all of the bony walls of the antrum. The floor of the orbit was found absorbed by pressure of the growth.

The hemorrhage was tremen dous, and as no bloodvessels could be found with sufficient strength of walls to permit torsion or ligation, we were much delayed by having to resort to packing the rather appalling cavity made by the removal of the diseased tissue. The

eye was left in a faint hope that it might be preserved. The superficial parts were brought together with silver-wire sutures, the nose being replaced and all nicely completed, first packing the cavity with iodoform gauze.

Some idea of the cavity left by the removal of the diseased mass of bone and soft tissue can be formed by the fact that about three yards and a half of iodoform-gauze bandage three inches wide was required to pack the chasm.

As the ossa nasi of the diseased side was also removed, there was no trouble about sufficient outlet in removing the packing and restoring fresh. The hemorrhage was controlled, and the patient, who was a very courageous woman, rallied, and under the care of Dr. W. N. Bailey promised fairly for the three days following the operation; but on June 19th there were slight rigors followed by some elevation of temperature.

June 22*d*.—Paralysis of right side.

23*d*.—Clonic convulsions, which continued until death on January 25th.

I had in the meantime submitted a specimen of the tumor to Professor Matson, of Pittsburg, an accomplished pathologist and microscopist, who pronounced it a giant-celled sarcoma.

Case II.—J. H., male, aged forty-four years, married. Father died of pulmonary disease in May, 1892. Noticed pain over right eye; most felt in the evening and at night; rest broken.

August, 1892.—Dr. Treacy, the family physician, with Dr. McLaren operated upon the case by drilling into the antrum through the hard palate, and, following treatment of the cavity, there was relief.

In January, 1893, patient caught cold, and had intense pain again above the eye of the affected side, and he sought again his family physician, Dr. Treacy.

There was not much swelling or pain about the antrum, but a blister formed on the hard palate about the seat of the former trephining.

Some teeth were now removed by Dr. McLaren with relief of the pain.

November 29, 1893.—Dr. Treacy sent the patient to me for treatment. His face was much distorted by swelling on the right side and the eye protruding. A large swelling in the submaxillary triangle of the same side of the size of a goose egg. Pain intense over right eye. General condition of the patient was very bad. The discharge from the naris on the affected side copious and foul to an extreme degree.

I trephined the antrum the following day and removed a quantity

of blackish-brown masses coequal with the antral capacity. These masses resembled old coffee grounds; they had a heavy, sickening, burned-chestnut odor.

After getting the patient cleaned up by antiseptic washes and free use of iodoform, I poulticed the swelling on the neck, and, with the exhibition of arsenic, cod-liver oil, and malt, in three months the tumor disappeared by absorption and the case was in a most promising condition. A cauliflower-like excrescence around the large opening I made in the antrum disappeared also, and I flattered myself for a time that the case had broken the record by turning from the threatening malignant to the benign; but untoward changes again occurred, largely from the erratic habits of the patient, and now at this writing, May 12, 1894, the case involves the eyeball, all of the malar bone and upper jaw of the affected side, the ossa nasi, and the disease is undoubtedly malignant.

An operation is under consideration by the patient; in fact, has been under consideration ever since the time when the conditions were favorable and safe, which I regret to say they now no longer are.

This patient disappeared some six weeks ago, when I advised that he allow me to cut down and remove a part of the ossa nasi and the upper and inner part of the antral walls. He declined being operated upon then. However, he returned about four weeks later, mentally ready for the operation; but in the meantime the case had, in my opinion, progressed beyond the reach of safe operative measures, at least beyond the point where hope for the non-return of the disease is assuring, and he passed from my professional care.

Note.—Six weeks later I learned that this patient had been operated on by a surgeon of Pittsburg, who removed all the diseased mass except the protruding eyeball. Death followed in a few weeks. I could adduce many other cases from my note-books which would serve to strengthen my plea for early operations on the antrum.